THE ECONOMICS OF HIGHWAY TRANSPORTATION

GENERAL DESCRIPTION OF THE STATE

Montana is the third largest State in the Union. It is 580 miles long and is 315 miles wide. The most direct highway through the State is about 700 miles long - about equal to the distance from Chicago to Washington, D. C. Altitudes range from a high of 12,850 feet at Granite Peak to a low of 1820 feet where the Kootenai River crosses the western boundary. As the name "Montana" implies, a large part of the State is mountainous.

The State may be divided roughly into two sections: The western one-third, which is mountainous; and the eastern two-thirds, which is composed of rolling prairie and benchland. About one-third of the land is mountainous; one-third is farm land; and one-third is grazing land.

Among the states of the nation, Montana ranks third in area, but only forty-second in population. This accounts for a population density of 4.1 persons per square mile as compared with a population density of 50.7 persons per square mile for the United States. Montana has 0.39% of the population in the nation, 4.90% of the area, and 2.12% of the road and street mileage.

The climate is as varied as the topography. The climate west of the continental divide is influenced by Pacific Ocean factors and is generally more moderate with above average moisture. The area east of the divide is subject to the full sweep of Arctic storms with their severe cold and winds, and also has high summer temperatures. The highest temperature in the State of 117 degrees was recorded at Glendive; the lowest temperature of -70 degrees was recorded at Rogers Pass in the mountains northwest of Helena. This is the lowest official U. S. record at this time.

The highest annual moisture of 138 inches was recorded at Glacier

Park and the highest annual snowfall of 342 inches was recorded at Summit, a community on the southern edge of Glacier Park. The lowest annual moisture of 3.54 inches was reported at Rock Springs in the east central part of the State. The lowest annual snowfall of 4.5 inches was also reported in this section of the State at Savage.

ECONOMIC DEVELOPMENT OF THE STATE

Many of the principal and older cities in the State were established during the early mining days. These cities were quite well established before the railroads were built through the State. The principal trans-continental railroads were located with the objective of serving these cities as much as possible, and other connecting lines were built to join the cities not on the main line.

Most of the newer cities in the State owe their existence to the railroads. As the railroad pushed across the State, new cities sprang up at strategic points and became the focal trading and shipping points.

With the exception of the mining cities, the principal urban development is located along the large river valleys. These valleys provided the easiest routes for early roads and the railroads, and the cities naturally developed adjacent to these transportation facilities. The existence of adequate water and suitable terrain also encouraged the development of irrigated areas along the rivers and streams. Intensive cultivation in irrigated areas leads to the development of smaller farm units and a more concentrated population.

Commerce and industry have been an important factor in the recent development of the State. New industries have been developed at points where such factors as labor force, markets, cheap power, raw materials and transportation facilities have been favorable.

As agricultural production and industrial development have increased, there has been a corresponding increase in the demand for commercial facilities. Most of this development has been within and adjacent to the larger cities, but much of the demand, particularly in connection with service to agriculture, has been met by establishment of new commercial facilities in the smaller, outlying cities.

WESTERN REGION OF THE STATE

The western, mountainous region of the State extends in a general northwest-southeast direction from the Canadian boundary to and along the southern boundary of the State. There are also a few other mountain ranges and spurs which extend into the central portion of the State, but the great bulk of the mountains are located in the western region.

This area is characterized by large and fertile inter-montane valleys and equally fertile, but narrower, valleys adjacent to the large rivers and their tributaries.

With a few exceptions, the principal cities are located in the larger valleys where terrain was a deciding factor in the location of railroads and highways. These valleys are also the site for much of the farming, particularly the irrigated places.

In the lower altitudes, where the climate is warm enough, most of the general crops may be grown. These places are also suitable for the growing of commercial fruits and berries. Much of the western region is composed of high altitude terrain where the growing season is too short for general crops. These places, however, have the abundant moisture and cool weather which is favorable for the growth of native grasses and other grazing and hay-producing crops. Most of the mountainous land is set aside for forest reserves, and although private

ownership of the land is prohibited, the neighboring ranches are permitted to graze their livestock on the lush summer ranges in these forests. These factors have led to the development of a great cattle industry in the western part of the State.

Practically all of the commercial timber of the State is also located in the western region. It is estimated that 82% of the area west of the continental divide is covered by forest. The area covered by forest is of sufficient size to place Montana in fourth position among all states in the nation. It is also one of the few states with a surplus of merchantable timber.

Practically all of the vast mining industry is located in the western mountainous region of the State, where conditions are favorable for the formation and discovery of mineral deposits. The Butte District, termed "The Richest Hill on Earth," accounts for from 80% to 90% of the total production in the State of copper, lead, zinc, gold, silver and manganese.

EASTERN REGION OF THE STATE

There are a few mountainous sections in the eastern two-thirds of the State, but it is predominantly a region of rolling prairies, benchland, and wide drainage courses.

There is considerable urban development along the large river valleys where the railroads and highways are located. There are also numerous highly developed irrigated areas adjacent to the larger rivers and the streams leading from the mountains. The warmer climate in the east is favorable for the production of many crops which are not suitable for the western region.

In the non-irrigated areas, the land is utilized for dry land farming and grazing. Where there is sufficient rainfall and the terrain permits cultivation, the land is planted largely in such grains as wheat, barley and oats.

The land which is too dry for grain, or is too rough for cultivation, is used for grazing of livestock.

The eastern section of the State accounts for about 90% of the crops and about 70% of the livestock and livestock products produced in the State.

Several long-established oil fields are located in the area east of the mountains where the sedimentary strata are favorable for the location of oil and gas pools. A large part of the recently discovered Williston Basin oil field extends into eastern Montana. This field now surpasses the output from the older fields in the State and it promises to be one of the most important in the nation.

Most of the eastern section of the state is underlain by coal beds of various grades. Practically all of the coal production in the State comes from the eastern section.

HIGHWAY TRANSPORTATION IN GENERAL

Highway transportation assumes great importance in Montana with its vast area and wide distribution of population. There are great areas in the State which are remote from railroad lines, and many areas are far from the main network of highways. Service to the residents in these areas is further complicated by the fact that the ranches are widely spaced and a road of considerable length may serve only a few places.

It is a public responsibility to provide road facilities for all residents, despite the degree of isolation which may exist. To accomplish this requires an extensive network of rural roads. As an illustration, one mile of rural road in Montana serves 5 persons of rural population. The national average is one mile of rural road to 16 persons of rural population. In Montana, each mile of rural road must serve two miles of area. The national average is one mile of rural road to each 0.9 mile of area.

The importance of highways in the State may also be measured by the ratio of population to motor vehicle registrations. Montana ranks forty-second in population, but it ranks fifteenth in the number of passenger cars per person and second in the number of trucks per person. A comparison of population to registrations is shown below:

	MONTANA	UNITED STATES
Persons per passenger car	2.9	3.3
Persons per truck	6.3	16.1
Persons per car and truck	2.0	2.7
Licensed drivers per vehicle	1.04	1.25

The degree of multiple vehicle ownership in Montana is evidenced by the low ratio of licensed drivers per vehicle.

The foregoing table shows the relatively high degree of truck ownership in Montana. It is also substantiated by the following table showing the distribution of vehicle registrations:

	PERCENTAGE DISTRIBUTION			
	Passenger Cars	Busses	Trucks	All Vehicles
Montana	67.98	0.37	31.65	100.00
United States	82.96	0.28	16.76	100.00

The extensive ownership of trucks on farms contributes to the high percentage of trucks in this State. Many farms have at least a pickup truck for light-duty hauling and general usage and also a heavier truck to haul livestock, grain, and other produce to market. Large places often find that several trucks are necessary to meet their requirements. Forty-eight percent of the trucks in Montana are on farms - the national average is twenty-seven percent of the trucks on farms.

The increasing trend in the importance of highway transportation is evidenced by the fact that from 1941 to 1954 passenger car registrations increased

41%, truck registrations increased 87%, and motor fuel consumption increased 88%, while population increased only 15%.

The responsibility for providing the necessary highways, road and streets is divided among many city, county, State and Federal agencies. This situation is illustrated by the following table showing system jurisdiction:

	MILES OF HIGHWAY		
CLASSIFICATION	RURAL	MUNICIPAL	TOTAL
County construction	56,589.7		56,589.7
State construction	6,743.2	166.4	6,909.6
National Forest Highway	1,218.1		1,218.1
National Forest Development	5,294.8		5,294.8
National Indian Reservation	868.2		868.2
National Park	291.0		291.0
National Monument	7.5		7.5
City construction		1,388.1	1,388.1
TOTAL	71,012.5	1,554.5	72,567.0

State highway systems include 9,374 miles of rural road and 211 miles of city streets.

The foregoing presents general information concerning the importance of highway transportation. The benefits to principal users will be described under separate headings.

WHAT HIGHWAYS MEAN TO:

THE RURAL RESIDENT

The rural resident:

comprises 45% of the population

owns 43% of the passenger cars

owns 78% of the trucks

owns 53% of all motor vehicles

accounts for 48% of the travel by Montana residents.

As a group the rural resident enjoys the greatest benefit from adequate highway service.

Because of the isolation that exists in many sections of the State, the rural resident depends almost entirely on roads and highways to provide the connecting link between home and vital services to be obtained at some distant point. If he is a farmer or rancher, he must haul in his seed in the spring, his fertilizer, his farm machinery, his feed for livestock, and the other materials and supplies which are necessary for the operation of his place.

He must haul his crops, livestock, milk or other produce to the nearest market, storage, or shipping point. Throughout the year, the roads must be kept open so that his children can get to school and his mail may be received. His supply of fuel, groceries and other supplies must be replenished regularly.

If he is a working man living in a rural area, he cannot, like the city resident, depend on friends, taxicabs, or other forms of public transit to get to the job if his car is disabled because of bad weather. Nor can he ordinarily walk to work.

It is doubtful that anyone realizes the value of adequate all-weather roads as does the isolated rural resident who cannot use his car or truck during many periods of the year because of mud or drifted snow. Unless he has an airplane or can use his tractor, he is deprived of vital services and supplies. In many instances, serious emergencies arise involving peril to human life. Also, inability to get food to stormbound livestock may result in catastrophic losses. That such instances are not hypothetical is substantiated by the fact that special

emergencies have been declared several times in the last decade in order to provide the necessary manpower and equipment to free stormbound residents. Properly elevated and surfaced roads would correct many impassable conditions.

THE URBAN RESIDENT

Unlike the rural resident, the urban resident does not often experience impassable street conditions. Icy streets may become dangerous, or dusty streets may become irksome, but generally street conditions within his city will permit movement during all types of weather. If his automobile is disabled, there are other forms of transportation readily available, or if necessary, he may be able to walk to work.

The city resident, however, is highly dependent on the transportation service provided by the principal highways. As a group, the city resident:

comprises 55% of the population

owns 57% of the passenger cars

owns 22% of the trucks

owns 47% of all motor vehicles

Accounts for 52% of the travel performed by Montana residents.

A high proportion of the urban population is located in the larger cities. About 44% of the total State population is located in cities over 2,500 population, and about 39% of the total population is located in 13 cities over 5,000 population.

Of 505 cities, towns, and small communities in the State, 137 are located at points which are not served by railroads; consequently, they are completely dependent on highway transportation. Of these places, 6 are incorporated cities, including two county seats.

The city resident not only travels a great deal on the principal high-

ways, but he is also highly dependent on the commercial aspects of highway transportation. Examples include the multitude of employees of service stations, garages, motels, drive-ins and related services. Truck, bus and taxicab drivers, traveling salesmen, and highway construction, and maintenance employees are representative of persons who depend directly on highway facilities for their livelihood.

Many retail and wholesale establishments depend entirely on truck transportation for incoming and outgoing shipments. Even those who ship by rail must rely on local pickup and delivery service to get supplies to and from the rail terminal.

Heavy industries are generally located on railroad spurs within or near to cities, but they also rely on trucks for some phases of transportation. They are also generally located so that employees must travel by car to get to and from work.

There has been a significant increase in the number of suburban residents in recent years. The suburban resident is generally more dependent on motor vehicle transportation than is the city resident. He is farther from the center of operations and must use his car for trips to work, to the grocery store, the business district, or some other trip of importance.

There is a pronounced trend towards two-car ownership among the suburban residents. The wage earner needs the car to travel to work; the housewife needs the car to get the children to and from school, to get to the grocery store, or to get to the business district for shopping. The result of this dual demand has resulted in an increasing need for two cars in the family.

AGRICULTURE

Agriculture, the most important industry in the State, is also the most

dependent on highway transportation. The farmers and ranchers are totally dependent on motor vehicle transportation as the connection between home and town, school, post office, church, shipping point, marketing center, creamery, and the many other points which must be reached during the varied course of operations and social activities.

The day of the self-sufficient farm is gone. The farmer no longer raises the greater part of his food on the farm. Nor does he stock a supply of food or fuel sufficiently large to last through the severe winter months. He has become nearly as dependent on packaged foods and the super market as has the city resident. Although he may raise his own livestock for his meat requirements, the hogs and cattle are generally taken to a processing plant to be butchered. The packaged product may be stored in a home freezer, but many times it is left in a central freezing plant for storage.

Few dairymen churn their own butter. It is more convenient and often more economical to sell the cream to the creamery and purchase the packaged product, or margarine, at the grocery store.

Because of its price, convenience, and ease of handling, most farms use fuel oil in preference to coal. Few places have sufficient storage capacity to hold a winter's supply of fuel; consequently, most farmers are dependent on regular deliveries of fuel oil from the dealer.

As strange as it may seem, a number of active farmers in this State live in the city. This is particularly true of the grain farmers. The prairie farm home of the past has not always been an attractive place to live. The lack of electricity, running water, shrubbery, and passable roads, combined with the general isolation of the farmstead, has made the farm family yearn for the convenience of the city. This has resulted in a situation which may be defined as "absentee operation

of the farm."

On the average place which raises wheat or other grain, and which does not have livestock, the period of operations extends from late spring to early fall. During the remainder of the year, conditions do not require the continuous presence of the operator. Since there is nothing to hold the operator on the farm, he has found it more convenient to move his family to a year-around residence in some nearby city or town and to use the farm house for a base of operations during summer months only.

This trend has even extended to some of the larger and more profitable livestock ranches, where hired men are kept on the ranch during the winter months to feed and look after the cattle. Under these conditions, the owner is free to live in town and make occasional visits to the ranch to inspect the operations.

This type of operation does not apply to the smaller farms, however. Such places are generally combination farms with dairy cattle, chickens, hogs and other livestock which require constant care.

In most instances, the absentee operation of farms has produced an increase in the amount of overall travel.

Mechanization and improved methods of operation over a period of years have produced a great change in agriculture. Mechanization has resulted in consolidation of units and an increase in the average size of farms. It has also permitted greater production with less physical labor and a smaller farm labor force. The improved methods of operation have also assisted in increasing production.

These changes are shown in the following table:

	1920	1950	CHANGE
Number of farms	57,677	35,085	-40%
Farm population	225,667	135,939	-40%
% Land area in farms	37.5	63.5	+70%
Average size (acres)	608.1	1,688.7	+178%
Cropland harvested	3,812,033	7,576,173	+99%
Total cropland	12,598,274	13,928,528	+11%
Farms reporting trucks	1,167	26,602	+ 23 times
Number of trucks	1,125	38,670	+ 32 times
Farms reporting automobiles	6,890	27,151	+ 4 times
Number of automobiles	7,647	44,890	+ 6 times

The improvement in rural highway facilities occuring from 1925 to 1950 is shown in the following table:

Location of farm	1925	1950
On hard-surfaced roads	0.14%	16.61%
On gravel roads	5.40%	30.54%
On earth roads	94.46%	52.85%
All surface types	100.00%	100.00%

Although great progress has been made in the improvement of the condition of rural roads, much remains to be accomplished, as is evidenced by the fact that 53% of the farms are still located on earth or unimproved roads. Also, as shown below, about 36% of the farms reported travel of 5 miles or more over unimproved roads in order to reach the nearest trading center.

Distance over Unimproved Roads to Travel Center	Farms Reporting
0.0 to 0.2 miles	27.61%
0.3 to 0.9 miles	7.96%
1.0 to 4.9 miles	28.56%
5.0 miles or more	35.87%
All travel	100.00%

Total crop production during 1953 amounted to $326,571,000. Various amounts of crops were consumed on the farm, fed to livestock, retained for seed, or stored, leaving a value of $221,295,000 for the crops that were marketed. All of the amount marketed was hauled from the farm to the grain elevator, shipping point, or marketing center by some type of motor vehicle moving upon the roads and streets of the State.

Among the states of the nation, Montana ranked first during 1954 in the production of mustard seed, second in wheat, third in barley, fifth in flaxseed and wild hay, and eighth in sugar beets.

For the most part, the bulk of this movement was to grain elevators located on railroads. The eventual movement to eastern or western markets is generally by rail as this form of transportation has proved to be the most economical for long distance shipments. There has been, however, an increasing trend to use truck transportation for some of the long distance hauling of grain, particularly where a cargo is sought for empty trucks crossing the State on return movement.

The following table shows the approximate percentages of various principal crops which were marketed, involving movement from the farm:

Sugar beets	98%
Wheat	90%
Flaxseed	90%
Barley	54%
Rye	41%
Oats	23%

In addition to crops, the marketing of livestock and livestock products accounts for a large part of the agricultural income in the State. During 1953 cash sales of livestock amounted to $117,249,000; sales of other livestock products raised the total to $150,860,000.

Home consumption accounted for about 3% of the animal production; most of the remaining animals were hauled from the farms and ranches on trucks. This amounted to over 2,000,000 head of cattle, sheep and hogs.

The trailing of cattle to market is a rare occurrence in these days. Fourteen acution markets and several processing plants are located throughout the State at convenient intervals. The speed and flexibility of trucks in hauling the cattle to these points, combined with the worthwhile savings in weight loss, have led to the abandonment of trailing practices in most instances. In some instances, shipments are made to the larger marketing centers outside the State without going through the auction rings in the State. In these cases, the cattle are mostly hauled to the railroad shipping points in trucks, instead of trailing them to the shipping points. Exceptions may occur in those instances where large ranches are located within a moderate distance from a railroad and find it more convenient to trail large groups of cattle to the shipping point rather than to haul them.

Truck transportation also plays a large part in the movement of cattle from the livestock auction market. Shipments within the State, or to points outside the State within a reasonable distance, are generally hauled by truck. This is especially true where shipment is in small groups which do not amount to carload lots.

Hay is one of the major crops in the State. The practice is generally to raise the hay and to feed it to the cattle on the ranch. For this reason there is not an extensive movement of hay in the State. There is some sale of hay, how-

ever, to livestock markets and feeding centers. There is also some movement of hay from surplus producing areas to places where hay is scarce. Practically all of this hay moves by truck.

The value of principal livestock products is shown below:

Dairy products	$ 18,985,000
Eggs	9,240,000
Wool	9,155,000
Chickens	3,286,000
Honey & Beeswax	844,000
Turkeys	739,000
TOTAL	$ 42,249,000

All of these products move to market in some type of motor vehicle over one or more of the various highway systems.

MINING AND MINERALS

Mining is the second largest industry in the State. The value of production in recent years has averaged about $125,000,000 per year, including the extraction of petroleum and natural gas. Among the states in the nation, Montana ranks first in the production of zinc, chromium, and vermiculite, second in manganese and lignite, third in silver and fourth in phosphate and pyrites, and fifth in copper.

The value of production of principal minerals during 1954 amounted to:

MINERAL	VALUE
Copper	$ 35,521,000
Petroleum	31,230,000
Zinc	13,574,000
Silver	4,638,000
Lead	4,009,000
Chrome	4,000,000
Coal	3,640,000
Total	$ 96,612,000

The Butte District accounts for about 94% of the value of principal metals mined in the State. Production from this district amounts to about 47% of the value of all minerals produced in Montana.

Practically the entire output from these mines in Butte moves by railroad from the mines to the smelter, and the products from the smelter move by rail to other points or markets. For this reason, highway transportation is not so important to the entire industry as it would normally be.

There are, however, several other mining areas around the State which are not served directly by railroad lines. As a rule, mines are located at relatively high and remote places which are inaccessible to railroad lines. The motor truck provides the only means of getting the heavy ore to the railroad shipping dock or to the smelter, if the hauling distance is not too great. Generally, the mines are too widely spread or the districts are too small to justify the construction of railroad lines to these points.

One of the more prominent examples of the part truck transportation plays in the movement of ore occurs in southwestern Stillwater County where large chrome deposits exist. It is estimated that about 80% of the known reserves of this metal on the North American continent are located at this point. Present production from the district amounts to about 77% of the total output of the nation. During World War II, these mines were so essential to the war effort that a special emergency road was built to provide access to the district. Reopening of shipping lanes eased the shortage of the metal and lower priced imports destroyed the market for ore from these mines. Under recent stockpiling provisions, the mines were reopened and shipments are being made at a substantial rate. The average hauling distance from the mines to the railroad is about 35 miles. The entire output of ore concentrates is moved by heavy trucks.

Although the principal coal mines in the State are located on railroad lines, there are numerous small coal mines and lignite mines throughout the State which supply local needs. Trucks are used almost entirely to haul the coal from these miles.

Crude petroleum production also depends greatly on truck transportation. The industry dates back to 1915 when the first oil was discovered in the south central portion of the State in the Elk Creek field near the Wyoming boundary. New wells and new fields have been discovered at intervals since that time.

Production has increased from 1,400,000 barrels in 1921 with a value of $2,200,000 to 14,195,447 barrels in 1954 with a value of $31,279,890. The recently discovered Williston Basin fields have contributed much to this increase.

Transportation requirements in the oil industry are served almost entirely by truck up to the point of actual production. The huge drilling rigs are moved in sections by trucks from one drilling site to another. The deep drilling of the Williston Basin wells required the use of rotary rigs, most of which were hauled by truck from the Oklahoma and Texas fields.

In addition to the drilling rigs, fuel for the machinery, the drilling "mud" and other supplies, and hundreds of feet of pipe are brought to the site by truck. Many of the wells are located at great distances from the nearest railroad, and in some instances they are in remote regions with only primitive roads. Under these conditions, the importance of good roads and truck transportation cannot be overstated.

In the smaller fields and the newer fields where production has not attained a large volume, the crude oil is hauled to the nearest railroad, or to the refinery if distance is not too great, by motor truck. As production increases in volume, a point is reached where the crude oil can be transported by pipeline at a

lower cost than by truck or railroad. This has led to the construction of pipelines to serve the major fields in the State. Smaller fields and individual wells continue to be served by truck transportation.

Pipelines have also been constructed recently to transport the refined liquid products from the refineries to the major markets. A large portion of the transportation requirement is still served by trucks, however, in moving the products from the pipeline terminals to the cities and towns which are not located on the line. The products are also distributed from the bulk plants by truck to the service stations, garages, and the ultimate consumer such as farms and ranches.

Recent figures disclose that trucks carry about 20% of the products of the petroleum industry.

TOURIST INDUSTRY

With a value of about $87,000,000 per year, tourism ranks as the third most important industry in the State. This amount represents the money spent in the State by 3,038,080 tourists during the year 1954. About 85% of these visitors traveled through the State in some 809,000 automobiles. This represents a ratio of about 4 out-of-state automobiles to each automobile registered in the State.

The average tourist drove 577 miles in viewing the State during his stay of 4.3 days. He spent $6.66 per day or $28.63 during his visit. All segments of the economy of the State benefit from this tourist business.

The unexcelled scenery, variety of attractions, excellent hunting and fishing, and the freedom from congestion are the principal features which tourists enjoy in this State.

Glacier National Park, in the northwestern part of the State, is the principal attraction. Its million acres of scenic grandeur include lofty peaks, more than sixty glaciers, wildlife in its natural habitat, 200 sparking lakes,

innumerable waterfalls and streams, and vast stretches of forest and wild flowers. These attractions are reached by excellent highways and hundreds of trails into primitive areas.

Visitors during the 1955 season amounted to 674,085 persons, of which 651,721, or 97%, arrived in 198,143 automobiles. Many additional uncounted visitors tour the park before and after the dates of the official season.

Yellowstone National Park, which is located on the southern edge of the State, is also a major attraction for the tourists traveling through the State. Three entrances to the park are located in Montana. About 51% of the visitors to the park, amounting to 703,801 persons during the 1955 season, entered the park in 214,573 automobiles via the Montana entrances.

Other points of interest to the tourist include historic ghost towns, mining cities, an impressive and colorful limestone cavern, the Custer Battlefield, and other national monuments, Indian museums, dude ranches, and beautiful streams, lakes and canyons too numerous to mention.

The attraction value of these points of interest may be measured in relation to their accessibility. The aversion of the tourist to rough, dusty or otherwise inadequate roads is well known. The entire economy of the State has a vital interest in the construction and maintenance of roads to a high standard in order to encourage this tourist travel. A concerted effort to provide the incentive for the tourist to remain in the State for one additional day would mean an increase of 25% or $20,000,000 per year in the amount of tourist business. In questionnaire returns, tourists listed good roads, followed by scenery and hospitality, as the principal features which they enjoyed in their travel through the State.

FORESTRY

Forestry is another industry to which highway transportation is very important. Montana has the fourth largest forest area among the states of the nation. One out of every four acres is forest land. More than 80% of the land west of the continental divide is forest covered. This area west of the divide is also the location of the bulk of the commercial timber in the State. Montana is one of the few states possessing a surplus of merchantable timber. It is interesting to note that about one-seventh of the nation's Christmas tree production comes from this State.

Although all phases of the industry rely on highway transportation, logging operations are most dependent on good roads. Commercial stands of timber are widely spread throughout the forested area. Also within one area, the mature trees are widely spaced. For this reason it is necessary to build a central road into the general area and to build several branch roads to tap the actual logging areas. Logs may be dragged out of the more inaccessible areas by tractors operating on primitive roads, but good roads are necessary for the movement of logs by truck to the sawmill. Logs make a heavy load, and heavy loads require roads with a good foundation. There is much valuable timber remaining in this State which is not used because of its isolation and the lack of adequate roads.

As is the practice with most industries in the State, long distance shipments of lumber, Christmas trees, fence posts and poles are made by railroad. For the shorter hauls within the State and adjacent states, the flexibility and speed of truck shipment favors this type of transportation.

SCHOOL TRANSPORTATION

For several years there has been a pronounced trend towards the consolidation of school districts. The isolated one-room schoolhouse is rapidly disappearing. It has been found that a better education can be provided more economi-

cally by transporting the pupils to central school facilities.

During the 1953-1954 season, 32,572 pupils throughout the State resided at a sufficient distance from school that public assistance for transportation had to be provided. Families of 8,321 pupils were granted an allowance for the use of private motor vehicles in transporting the children to school. An additional 24,251 pupils were transported by school bus. This involved the use of 728 busses, traveling an average route of 27.5 miles, which resulted in 7,292,692 bus miles and 79,768,243 pupil-miles of transportation for the year.

The roads used by these busses must be maintained in proper condition, and they are among the first roads to be plowed free of snow in the wintertime.

POSTAL SERVICE

Rural postal delivery is an important service in this State. Postal routes are divided into two general classes: Rural free delivery routes, and star routes. Rural free delivery routes involve the deposit of mail in boxes at points along the main roads or at principal intersections of side roads. Daily or tri-weekly service is provided, depending on location and degree of isolation. RFD routes are located on 7,020 miles of rural road, or about 10% of all rural roads in the State. During the course of a year, rural free delivery of mail requires about 2,032,000 vehicle miles of travel.

Star routes are established for the delivery of mail from central points to post offices in outlying communities. There are 396 star routes located in the State covering 17,251 one-way miles of road. Annual travel amounts to 4,671,913 miles.

RFD and star routes combined are located on 24,271 miles of road or about 34% of the rural road mileage in the State.

Like school bus roads, there roads must be kept open and in passable

condition during all types of weather.

HIGHWAY TRANSPORTATION INDUSTRY

It is estimated that 61,767 persons in Montana are employed in industries directly related to highway transportation. This is equal to about one-tenth of the total population and about 25% of the total labor force in the State.

That highway transportation assumes more than average importance in the State is evidenced by the fact that Montana has 0.54% of the motor vehicle registrations in the nation, but it has 0.64% of the automobile dealers, truck dealers, and repair shops - a ratio of 1.0 to 1.4.

Another measure of the importance of highway transportation to the State is available in the amount spent by the cities, counties and State for highway purposes. During 1954, this amounted to:

Cities	$ 3,600,142.73
Counties	8,844,450.66
State	26,044,662.37
TOTAL	$ 38,489,255.76

This is equal to $124.99 per privately-owned motor-propelled vehicle registered in the State. State highway construction expenditures of $17,190,478, including Federal Aid, amounted to $55.82 per motor vehicle. This amount is $5.71 more than was paid per motor vehicle in user taxes for support of State highways. It is just about equal to the average payment per vehicle for insurance.

SUMMARY

As the result of large area, high rate of motor vehicle ownership and the dispersed population, the Montana resident is highly dependent on motor vehicle transportation. To meet the highway transportation requirements, an extensive network of highways is needed. The cost of supporting a large mileage of highways

must be divided among a relatively small number of people, with the result that the cost per person is higher than the national average.

Climate also plays a large part in raising the cost of highway construction and maintenance in Montana. The long winters limit construction activities to a relatively short season when conditions are favorable. This short construction season results in higher bids for construction contracts.

The long and severe winters also increase the cost of maintaining the highways. Snow plowing and sanding are necessary for a period extending from early fall to late spring. The freezing action also produces severe damage to highways surfaces with extensive breakup occuring during the spring thaws. Patching and resurfacing of the damaged sections is a costly procedure. These factors contribute to a relatively high cost per mile for maintenance, and the total cost for maintenance amounts to a substantial portion of the highway budget.

Being a bridge state between the midwest and the rapidly growing northern Pacific states, there is considerable transcontinental and interstate traffic moving through Montana. The natural geographic position of the State accounts for much of this traffic, but there is also considerable extra traffic which moves through the State because of impassable mountain ranges extending through adjoining states which have the effect of diverting traffic to the lower and less difficult passes along the northwestern boundary of the State. Therefore, the problem of providing adequate highways through the State assumes national importance, and even international importance, in view of the substantial volume of traffic moving through Montana to and from the Canadian provinces.

All types of motor vehicle owners and operators, both rural and urban, passenger car and truck, have a vital interest in the improvement of highways

throughout the State. It has been proven many times that good highways pay for themselves, and in many instances, the benefits received from new highway construction far exceed the cost to the motoring public.